REMARKS/ARGUMENTS

The subject matter of claims 21 and 22 has been incorporated in claim 20, which has been additionally amended to make it explicit that the bearing element **consists** of the three recited layers. Claims 29-39 have been canceled.

If applied to the amended claim, the rejection of claim 20 under 35 U.S.C 103(a) as being unpatentable over Fujita et al, the primary reference, in view of Desaki et al and the ASM Handbook, both of record, is respectfully traversed.

The materials of the protective shell and the running layer of the claimed bearing element are known. Applicants propose a new and useful aluminum alloy for the **base layer**.

What Fujita et al (and the Examiner) describe as an aluminum bearing alloy (of a composition overlapping the claimed composition) is the **running** layer of a bearing element comprising a backing steel plate (protective shell) which is cladded to the backing steel plate by an aluminum foil **bonding** layer (col. 5, lines 63-65). The bearing element is a **bi**metal (col. 6, lines 3, 5 and 21, for example), i.e. it consists of **two** metallic layers: the backing plate and the running layer. These two metallic layers are bonded together by an aluminum

foil.

Desaki et al also disclose an aluminum alloy in the form of a lining (see claims 14-17), which is what applicants call the **running** layer. As described in col. 4, lines 35-54, the bearing comprises a backing metal (applicants' protective shell) and the lining, which **may** be coated by a lubricant. As in Fujita et al, the bearing element may be a bi-metal type bearing (col. 4, line 38) or a three-layer type structure (col. 4, lines 42/3), in which the bearing comprises the backing metal (protective shell), the lining (running layer), with an intermediate strengthening layer sandwiched between the backing metal and the lining (col. 4, lines 43-46). Desaki et al's intermediate layer is pure aluminum or an Al-Cu, Al-Mg or Al-Mn based alloy. This does not suggest the alloy set forth in claim 20.

As is respectfully submitted to be clear from the above description taken from the descriptions of the cited patents and, therefore, reflecting the teaching of the prior art, Fujita et al and Desaki et al irrefutably deal with aluminum alloys used in the **running** layer (lining) of a bearing element. In this respect, applicants do not understand the Examiner's comment that "Fujita does not mention other particulars of the bearing structure, i.e. the running layer, base layer, etc."

As pointed out in the above-quoted passages of the patent, they explicitly describe the same. As to the Examiner's assertion that Desaki et al's coating "acts as the running layer," applicants respectfully disagree with this interpretation. While, as the Examiner has stated, Desaki et al's backing metal is analogous to the claimed protective shell, their lining is analogous to the claimed running layer and **not** to the claimed **base** layer, which is structurally analogous to Desaki et al's intermediate layer. In this respect applicants note that, according to the patent, the resin coating "**may** be deposited on the surface of aluminum alloy in contact with the opposed shaft," i.e. it is **optional** and not a necessary part of the bearing element. Most importantly, this **lubricant** coating is applied to the surface of the lining (running layer) and it is **not** the **running** layer (lining) of the bearing element. It merely serves to "prevent(ing) the seizure from occurring in the initial operation" (col. 4, lines 50/51). As has been indicated hereinabove, the patent explicitly describes the aluminum alloy as being used as the lining (running surface).

In view of the above, the Examiner's holding of obviousness is respectfully traversed since Desaki et al do **not** teach a thin coating lubricant layer as a running layer of a bearing element but, rather they teach an aluminum alloy as a running layer, just as Fujita et al. Therefore, the most these

two patents teach is an aluminum alloy overlapping the ranges of the claimed aluminum alloy as a **running** layer. If an intermediate (base) layer is used between the protective shell (backing metal) and the running layer (lining) it is either the aluminum **bonding** layer of Fujita et al or the intermediate layer of Desaki et al, both differing fundamentally from the aluminum alloy claimed by applicants.

It should be noted that the claimed aluminum alloy of the **base** layer (which **underlies** the running layer) does not have the usual properties of a **running** layer, which is clear from the fact that the soft phase is limited to a maximum of 4.5%, by weight. However, the composition of the aluminum alloy is such that it has "emergency" running properties, i.e. if an emergency arises because the running layer is partially worn down or otherwise does not function properly, the bearing will not become welded to the shaft but the "emergency" properties of the base layer will serve for a short while to keep the bearing running. On the other hand, the claimed aluminum alloy also contains hard particles to enhance the structural solidity of the bearing element. At the same time, it serves to bind the running layer to the protective shell, thus dispensing with the need of a special bonding layer, as in Fujita et al. Thus, the base layer of the claimed composition serves several functions, thus simplifying the structure of the bearing

element and improving its qualities.

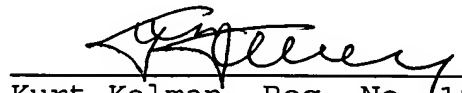
Departing from Fujita et al and considering the above, a person of ordinary skill in the art would have the task to replace the aluminum bonding layer with a layer which not only bonds but has the additional useful properties outlined hereinabove. If that person looked at Desaki et al, he would use the composition of their intermediate layer (which differs fundamentally from that claimed). Thus, the combined teaching can, at most, lead to a bearing element consisting of a backing metal (protective shell admitted to be known), a lining (running layer) of a composition overlapping that of the aluminum alloy claimed, an intermediate layer (base layer) of the composition described by Desaki et al, and a lubricant coating on the lining.

Departing from Desaki et al, all that Fujita et al would teach a person of ordinary skill in the art is to replace their lining (running layer) with that of Fujita et al. No possible combination of the two teachings leads to a layer sandwiched between a protective shell (backing) and a running layer (lining), which has the claimed composition.

In view of the above, it is respectfully submitted that a bearing consisting of the three claimed layers, wherein the

intermediate layer has the claimed composition, is not obvious from the prior art. A sincere effort having been made to overcome all grounds of rejection, favorable reconsideration and allowance of claims 20 and 23-28 are respectfully solicited.

Respectfully submitted,
ROBERT MERGEN ET AL



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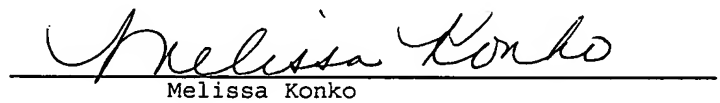

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